

PART I: STATEWIDE IMPLEMENTATION PLAN

Point Source Strategy

The Point Source Strategy addresses impacts attributed to a specific identifiable end of pipe or “point.” The vast majority of nutrient point source discharges are from wastewater treatment plants.

- **Maryland’s Point Source Strategy for the Bay is based on a two-part plan to (1) upgrade Maryland’s wastewater treatment plants to state-of-the-art Enhanced Nutrient Removal (ENR) technology to meet concentrations of 3.0 mg/l (parts per million) or less total nitrogen and 0.3 mg/l or less total phosphorus and (2) maintain nutrient loading caps as described below. Upgrades of wastewater treatment plants to achieve ENR will be funded under the Bay Restoration Fund Act (BRF), signed by Governor Ehrlich on May 26, 2004. The point source strategy requires wastewater treatment plants with design* capacity of 500,000 gallons per day or greater to upgrade to achieve ENR as soon as possible and to operate the ENR facility in a manner that**

optimizes its nutrient removal capability. Wastewater treatment plants with design* capacity of 500,000 gallons per day or less, with users that are paying Maryland’s Bay Restoration Fee as required by the BRF, will be required to upgrade as needed to maintain their loading caps as described below. Wastewater treatment plants with design* capacity of 500,000 gallons per day or less, with users that are not paying Maryland’s Bay Restoration Fee as required by the BRF, are required to maintain ENR levels in their discharge. In addition to the requirements of this point source strategy for Chesapeake Bay, lower limits may also be required for some wastewater treatment plants to meet water quality standards in local receiving waters. The second part of the point source strategy requires all wastewater treatment plants to maintain established nutrient waste load caps within the Chesapeake Bay Watershed. These caps for significant, non-significant and industrial facilities are as follows.

* Design capacity for significant facilities shall meet the following two conditions:

- (1) A discharge permit was issued based on the plant capacity, or the Maryland Department of the Environment (MDE) issued a letter to the jurisdiction with design effluent limits based on the new capacity as of April 30, 2003.
- (2) Planned capacity was either consistent with the MDE-approved County Water and Sewer Plan as of April 30, 2003, or shown in the locally-adopted Water and Sewer Plan Update or Amendment to the County Water and Sewer Plan, which were under review by MDE as of April 30, 2003.

- Significant wastewater treatment plants are those with design* capacity of 500,000 gallons per day or greater. Annual nutrient load caps are based on an annual average concentration of 4.0 mg/l total nitrogen and 0.3 mg/l total phosphorus and the approved design capacity of the plant. The combined flow of these facilities comprises more than 95% of the total sewage flow generated in Maryland
- Non-significant wastewater treatment plants are those with design capacity of less than 500,000 gallons per day. Annual nutrient loads are based on design capacity or projected 2020 flow, whichever is less, and concentration of 18 mg/l total nitrogen and 3 mg/l total phosphorus. The 2020 projected flows were based on the county growth rates provided by the Maryland Department of Planning. Expanding non-significant facilities cannot exceed 6,100 lbs/year in nitrogen and 457 lbs/year in phosphorus.
- **Significant industrial wastewater treatment plants** are those with a minimum total nitrogen

discharge of 75 pounds per day or a minimum total phosphorus discharge of 10 pounds per day, which are equivalent loads of 500,000 gallons per day at 18 mg/l total nitrogen or 3 mg/l total phosphorus for a municipal wastewater treatment plant. Annual loads are based on a combination of 1) recent performance levels, after having already achieved significant loading reductions since the initial baselines established in 1985; and, 2) identification and/or negotiation on a case-by-case basis of additional potential loading reductions.

- Where applicable, more stringent load caps may be required to meet local water quality.

Implementation of the ENR Strategy will reduce nutrient loads in the Chesapeake Bay by more than 7.5 million pounds of nitrogen per year and more than 260,000 pounds of phosphorus per year from 2000 levels. Achieving these reductions will account for more than one-third of Maryland's commitment under the *Chesapeake 2000 Agreement*.



Governor Robert Ehrlich helps break ground for the Easton Wastewater Treatment Plant upgrade.

The Hurlock Wastewater Treatment Plant prepares to upgrade to ENR.



Regardless of where their current nutrient loading levels are relative to their cap load, ENR facilities must be operated in a manner that optimizes the nutrient removal capability of the facility in order to achieve ENR performance levels. Facilities that either grow beyond their established loads or are unable to achieve them because of technical limitations, may be eligible to trade or use other nutrient load offsets, subject to

the requirements of a National Pollutant Discharge Elimination System (NPDES) permit. MDE is currently working with stakeholders to develop a trading/offset strategy to address growth and maintain load caps achieved as a result of ENR Strategy Implementation.

Implementation Schedule

Publicly owned, significant wastewater treatment plants that discharge to the Chesapeake Bay have priority under the Bay Restoration Fund and will be funded for ENR upgrades first.

ENR upgrades for other wastewater treatment plants may be funded later based on the cost-effectiveness of the upgrade and other requirements of the BRF.

Point Source Implementation Schedule

BMP	Implementation Goal (acres, systems, cap load)	Total Cost (\$)	Total Projected Funds (\$)	Projected Implementation Based on Existing Resources (acres, systems, mg/l) (2003-2010)	Remaining Implementation (2003-2010) (acres, systems, mg/l)	Remaining Funding Gap (\$)
ENR	66 WWTPs	0.75 – 1.00 Billion	0.75 – 1.00 Billion	54 WWTPs	12 WWTPs	0.161-0.411 Billion

Notes:

The estimated ENR schedule is provided as a separate table.

WWTP is the acronym for wastewater treatment plant.

ENR Implementation Schedule

Point Source*	County	Design Capacity (MGD)	2000 TNL (LB/YR)	ENR Strategy Total Nitrogen Load Cap (LBS/YR)	2000 TPL (LBS/YR)	ENR Strategy Total Phosphorus Load Cap (LBS/YR)	Projected Construction Completion Year
Choptank Tributary Basin							
Cambridge	Dorchester	8.100	112,051	98,676	41,284	7,401	By 2011
Denton	Caroline	0.800	12,134	9,746	1,596	731	By 2010
Easton	Talbot	4.000	52,633	48,729	14,411	3,655	By 2007
Total Significant		12.900	176,818	157,151	57,291	11,786	
Total Non-Significant		1.473	40,352	44,454	5,808	6,991	
Total Industrial		0.750	2,874	4,500	1,900	370	
Total Point Sources		15.123	220,045	206,105	64,472	19,147	
Load Cap Point and Nonpoint Sources			4,100,000	2,280,000	380,000	210,000	
Lower Eastern Shore Tributary Basin							
Crisfield	Somerset	1.000	27,044	12,182	3,966	914	By 2007
Delmar	Wicomico	0.850	24,745	10,355	558	777	By 2010
Federalsburg	Caroline	0.750	18,117	9,137	913	685	By 2010
Fruitland	Wicomico	0.800	25,812	9,746	4,302	731	By 2010
Hurlock	Dorchester	1.650	42,327	20,101	22,576	1,508	By 2007
Pocomoke City	Worcester	1.470	24,854	17,908	11,238	1,343	By 2010
Princess Anne	Somerset	1.260	20,092	15,350	268	1,151	By 2010
Salisbury	Wicomico	8.500	332,099	103,549	22,735	7,766	By 2010
Snow Hill	Worcester	0.500	21,632	6,091	4,791	457	By 2011
Total Significant		16.780	536,723	204,418	71,346	15,331	
Total Non-Significant		1.300	44,134	48,800	7,159	8,133	
Total Industrial		0	0	0	0	0	
Total Point Sources		18.080	580,857	253,218	78,505	23,465	
Load Cap Point and Nonpoint Sources			6,700,000	4,110,000	530,000	330,000	
Notes: * Facilities listed by name are those identified by Maryland as "Significant" (having a planned design capacity of 500,000 gallons per day or greater. See the first page of the Point Source Strategy for more details). ** Schedules for Federal and private facilities are not available.							

ENR Implementation Schedule

Point Source*	County	Design Capacity (MGD)	2000 TNL (LB/YR)	ENR Strategy Total Nitrogen Load Cap (LBS/YR)	2000 TPL (LBS/YR)	ENR Strategy Total Phosphorus Load Cap (LBS/YR)	Projected Construction Completion Year
Lower Potomac Tributary Basin							
Indian Head	Charles	0.500	13,639	6,091	2,352	457	By 2010
NSWC — Indian Head (Federal**)	Charles	0.500	6,730	6,091	1,949	457	NA
La Plata	Charles	1.500	16,705	18,273	3,460	1,371	By 2010
Leonardtwn	Saint Mary's	0.680	18,598	8,284	3,853	621	By 2010
Mattawoman	Charles	20.000	320,637	243,645	2,890	10,964	By 2010
Swan Point	Charles	0.600	1,741	7,309	290	548	By 2011
Total Significant		23.780	378,050	289,694	14,794	14,418	
Total Non-Significant		0.369	10,377	10,411	1,350	1,755	
Total Industrial		0.486	1,778	1,777	4,451	740	
Total Point Sources		24.635	390,206	301,882	20,595	16,913	
Load Cap Point and Nonpoint Sources			2,900,000	2,060,000	180,000	140,000	
Lower Western Shore Tributary Basin							
Annapolis	Anne Arundel	13.000	165,551	158,369	9,606	11,878	By 2010
Broadneck	Anne Arundel	6.000	68,510	73,093	7,258	5,482	By 2010
Broadwater	Anne Arundel	2.000	15,371	24,364	1,963	1,827	By 2010
Chesapeake Beach	Calvert	1.500	8,950	18,273	1,724	1,371	By 2010
Marlay Taylor (A.K.A. Pine Hill Run)	Saint Mary's	6.000	84,780	73,093	14,260	5,482	By 2011
Mayo Large Communal	Anne Arundel	0.820	13,509	9,989	1,281	749	By 2011
U.S. Naval Academy (Federal**)	Anne Arundel	1.000	3,917	12,182	63	914	NA
Total Significant		30.320	360,587	369,366	36,156	27,702	
Total Non-Significant		0.099	1,589	2,108	303	351	
Total Industrial		0	0	0	0	0	
Total Point Sources		30.419	362,176	371,474	36,396	28,054	
Load Cap Point and Nonpoint Sources			1,700,000	1,400,000	110,000	90,000	
Notes: * Facilities listed by name are those identified by Maryland as "Significant" (having a planned design capacity of 500,000 gallons per day or greater. See the first page of the Point Source Strategy for more details). ** Schedules for Federal and private facilities are not available.							

ENR Implementation Schedule

Point Source*	County	Design Capacity (MGD)	2000 TNL (LB/YR)	ENR Strategy Total Nitrogen Load Cap (LBS/YR)	2000 TPL (LBS/YR)	ENR Strategy Total Phosphorus Load Cap (LBS/YR)	Projected Construction Completion Year
Middle Potomac Tributary Basin							
Blue Plains (MD portion)	District of Columbia	169.600	3,367,631	2,066,108	40,141	92,975	By 2014
Beltsville USDA East (Federal**)	Prince George's	0.620	7,555	7,553	1,357	566	NA
Damascus	Montgomery	1.500	19,999	18,273	3,005	1,371	By 2010
Piscataway	Prince George's	30.000	669,955	365,467	7,517	16,446	By 2010
Poolesville	Montgomery	0.750	16,660	9,137	1,587	685	By 2010
Seneca Creek	Montgomery	20.000	268,698	243,645	25,684	10,964	By 2010
Total Significant		222.470	4,350,498	2,710,183	79,291	123,007	
Total Non-Significant		0.420	8,486	13,367	1,425	2,228	
Total Industrial		0	0	0	0		
Total Point Sources		222.890	4,358,985	2,723,550	80,716	125,235	
Load Cap Point and Nonpoint Sources			7,400,000	5,130,000	330,000	320,000	
Patapsco/Back Tributary Basin							
Back River	Baltimore	180.000	4,529,473	2,192,803	76,814	109,640	By 2012
Cox Creek	Anne Arundel	15.000	627,021	182,734	45,048	13,705	By 2010
Freedom District	Carroll	3.500	65,579	42,638	4,998	3,198	By 2010
Mount Airy	Carroll	1.200	8,883	14,619	798	1,096	By 2010
Patapsco	Baltimore City	73.000	2,388,559	889,304	144,631	66,698	By 2011
Total Significant		272.700	7,619,514	3,322,097	272,289	194,337	
Total Non-Significant		0.430	4,422	10,767	887	1,795	
Total Industrial		4.066	912,288	541,162	44,786	27,369	
Total Point Sources		277.196	8,536,224	3,874,026	317,962	223,501	
Load Cap Point and Nonpoint Sources			11,100,000	5,930,000	590,000	480,000	
Notes: * Facilities listed by name are those identified by Maryland as "Significant" (having a planned design capacity of 500,000 gallons per day or greater. See the first page of the Point Source Strategy for more details). ** Schedules for Federal and private facilities are not available.							

ENR Implementation Schedule

Point Source*	County	Design Capacity (MGD)	2000 TNL (LB/YR)	ENR Strategy Total Nitrogen Load Cap (LBS/YR)	2000 TPL (LBS/YR)	ENR Strategy Total Phosphorus Load Cap (LBS/YR)	Projected Construction Completion Year
Patuxent Tributary Basin							
Bowie	Prince George's	3.300	44,442	40,201	992	3,015	By 2010
Dorsey Run	Anne Arundel	2.000	16,490	24,364	945	1,827	By 2010
Fort Meade (Federal**)	Anne Arundel	4.500	10,331	54,820	1,198	4,112	NA
Little Patuxent	Howard	25.000	366,461	304,556	18,767	22,842	By 2010
Maryland City	Anne Arundel	2.500	20,306	30,456	1,479	2,284	By 2010
Marlboro Meadows (Private**)	Prince George's	0.600	11,654	7,309	873	548	NA
Parkway	Prince George's	7.500	63,213	91,367	5,304	6,853	By 2010
Patuxent	Anne Arundel	7.500	33,265	91,367	4,683	6,853	By 2010
Piney Orchard (Private**)	Anne Arundel	1.200	3,979	14,619	294	1,096	NA
Western Branch	Prince George's	30.000	418,909	365,467	37,990	27,410	By 2010
Total Significant		84.100	989,050	1,024,526	72,526	76,839	
Total Non-Significant		0.817	14,012	20,999	2,075	3,500	
Total Industrial		0.325	17,636	5,431	14,068	543.083	
Total Point Sources		85.242	1,020,699	1,050,956	88,670	80,882	
Load Cap Point and Nonpoint Sources			4,100,000	3,150,000	270,000	220,000	
Notes: * Facilities listed by name are those identified by Maryland as "Significant" (having a planned design capacity of 500,000 gallons per day or greater. See the first page of the Point Source Strategy for more details). ** Schedules for Federal and private facilities are not available.							

ENR Implementation Schedule

Point Source*	County	Design Capacity (MGD)	2000 TNL (LB/YR)	ENR Strategy Total Nitrogen Load Cap (LBS/YR)	2000 TPL (LBS/YR)	ENR Strategy Total Phosphorus Load Cap (LBS/YR)	Projected Construction Completion Year
Upper Eastern Shore Tributary Basin							
Centreville	Queen Anne's	0.500	12,685	3,004	2,628	751	By 2011
Chestertown	Kent	1.500	17,978	18,273	8,437	1,371	By 2007
Elkton	Cecil	3.050	82,662	37,156	5,185	2,787	By 2010
Kent Island	Queen Anne's	3.000	87,899	36,547	3,144	2,741	By 2007
Northeast River	Cecil	2.000	23,023	24,364	1,632	1,827	By 2010
Perryville	Cecil	1.650	10,781	20,101	777	1,508	By 2010
Rock Hall	Kent	0.505	11,933	6,152	414	461	Future
Talbot County Region II	Talbot	0.660	15,766	8,040	3,385	603	By 2010
Total Significant		12.865	262,727	153,637	25,601	12,048	
Total Non-Significant		1.995	42,908	58,360	8,429	9,727	
Total Industrial		0	0	0	0	0	
Total Point Sources		14.860	305,634	211,998	34,030	21,775	
Load Cap Point and Nonpoint Sources			6,300,000	3,520,000	490,000	300,000	
Notes: * Facilities listed by name are those identified by Maryland as "Significant" (having a planned design capacity of 500,000 gallons per day or greater. See the first page of the Point Source Strategy for more details). ** Schedules for Federal and private facilities are not available.							

ENR Implementation Schedule

Point Source*	County	Design Capacity (MGD)	2000 TNL (LB/YR)	ENR Strategy Total Nitrogen Load Cap (LBS/YR)	2000 TPL (LBS/YR)	ENR Strategy Total Phosphorus Load Cap (LBS/YR)	Projected Construction Completion Year
Upper Potomac Tributary Basin							
Ballenger Creek	Frederick	6.000	81,659	73,093	3,590	5,482	By 2010
Brunswick	Frederick	1.400	34,935	17,055	5,822	1,279	By 2010
Celanese	Allegany	2.000	18,422	24,364	7,763	1,827	Complete
Conococheague	Washington	4.100	21,512	50,032	2,780	3,752	By 2010
Cumberland	Allegany	15.000	355,300	182,734	50,434	13,705	By 2010
Emmitsburg	Frederick	0.750	7,575	9,137	2,912	685	By 2011
Fort Detrick (Federal**)	Frederick	2.000	22,788	24,364	3,308	1,827	NA
Frederick	Frederick	8.000	485,460	97,458	82,916	7,309	By 2010
Georges Creek	Allegany	0.600	36,525	7,309	6,087	548	By 2010
Hagerstown	Washington	8.000	265,734	97,458	56,857	7,309	By 2010
Maryland Correctional Institute	Washington	1.600	6,931	19,492	957	1,462	By 2010
McKinney	Frederick	12.000		146,187		10,964	Future
Nicodemus	Washington	Diverted	29,035		5,637		Diverted to Conococheague
Taneytown	Carroll	1.100	15,929	13,400	4,156	1,005	By 2010
Thurmont	Frederick	1.000	9,722	12,182	1,787	914	By 2010
Westminster	Carroll	5.000	70,103	60,911	5,854	4,568	By 2010
Winebrenner	Washington	1.000	12,029	12,182	1,136	914	By 2011
Total Significant		69.550	1,473,657	847,360	241,998	63,552	
Total Non-Significant		6.184	165,554	211,301	29,638	35,217	
Total Industrial		21.500	237,267	120,085	49,663	31,383	
Total Point Sources		97.234	1,876,478	1,178,747	321,299	130,152	
Load Cap Point and Nonpoint Sources			8,500,000	6,330,000	690,000	560,000	
Notes: * Facilities listed by name are those identified by Maryland as "Significant" (having a planned design capacity of 500,000 gallons per day or greater. See the first page of the Point Source Strategy for more details). ** Schedules for Federal and private facilities are not available.							

ENR Implementation Schedule

Point Source*	County	Design Capacity (MGD)	2000 TNL (LB/YR)	ENR Strategy Total Nitrogen Load Cap (LBS/YR)	2000 TPL (LBS/YR)	ENR Strategy Total Phosphorus Load Cap (LBS/YR)	Projected Construction Completion Year
Upper Western Shore Tributary Basin							
Aberdeen	Harford	4.000	28,612	48,729	584	3,655	By 2011
Aberdeen Proving Ground — Aberdeen (Federal**)	Harford	2.800	55,125	34,110	1,064	2,558	By 2010
Aberdeen Proving Ground — Edgewood (Federal**)	Harford	3.000	22,292	36,547	1,323	2,741	NA
Havre de Grace	Harford	2.275	48,125	27,715	3,500	2,079	By 2010
Joppatowne	Harford	0.950	15,465	11,573	1,921	868	By 2010
Hampstead	Carroll	0.900	35,572	10,964	432	822	After 2010
Sod Run	Harford	20.000	391,952	243,645	41,334	18,273	By 2010
Total Significant		33.925	597,143	413,282	50,159	30,996	
Total Non-Significant		1.240	34,165	40,599	4,998	5,728	
Total Industrial		0	0	0	0	0	
Total Point Sources		35.165	631,308	453,882	55,157	36,725	
Load Cap Point and Nonpoint Sources			4,300,000	3,160,000	260,000	210,000	
Notes: * Facilities listed by name are those identified by Maryland as “Significant” (having a planned design capacity of 500,000 gallons per day or greater. See the first page of the Point Source Strategy for more details). ** Schedules for Federal and private facilities are not available.							

Current Programs

Implementing the Strategy

BIOLOGICAL NUTRIENT REMOVAL (BNR) PROGRAM

The Chesapeake Bay Agreement of 1987 specified a nutrient reduction goal of 40% by the year 2000. MDE, in support of Maryland's commitment to reduce the amount of nutrients being discharged to the Bay, developed a strategy for achieving the desired reduction by the upgrade of the significant wastewater treatment plants to remove nitrogen through a process known as BNR. Using BNR processes, more than 90% of pollutants are removed, while achieving nitrogen concentration below 8 mg/l total nitrogen. The BNR Cost-Share Program, first funded by the Maryland General Assembly during the 1984 legislative session, is a 50/50 State/local cost-share grant program that provides financial assistance to local governments to implement BNR technology at the largest publicly-owned sewage treatment plants in Maryland.

ENR PROGRAM

Recognizing that more needs to be done, the Chesapeake Bay 2000 Agreement requires further reductions in nitrogen and phosphorus entering the Bay by about 20 million pounds and 1 million pounds per year, respectively. MDE will use the Bay Restoration Fund to upgrade the significant wastewater treatment plants that discharge to the Chesapeake Bay with ENR technologies. Significant federal facilities are also required to upgrade to ENR. Once upgraded, these plants are expected to reduce nitrogen and phosphorus in the wastewater down to 3 mg/l total nitrogen and 0.3 mg/l total phosphorus. All facilities are required to maintain their loading caps. By meeting and maintaining these requirements, approximately one-third of the needed reductions under the Chesapeake Bay 2000 Agreement will be achieved. Grant funding assistance up to 100% of eligible ENR costs for planning,

Tributary Team members go on field tours, such as this one at a wastewater treatment plant, so that they can make informed decisions and proposals with their watershed initiatives.



design, and construction for significant facilities is available subject to the requirements of the BRF. Other facilities may be upgraded after the ENR upgrade of the targeted significant facilities is complete.

MARYLAND WATER QUALITY STATE

REVOLVING LOAN FUND (WQSRF) PROGRAM

The WQSRF makes below market rate of interest loans to local governments for water quality improvement projects. More than half of the wastewater treatment projects identified for funding through MDE's BNR Cost-Share Program have borrowed the 50% cost-share portion (local match to the State BNR Grant), as well as the expansion portion of the project costs, from the WQSRF. Projects identified for funding through MDE's ENR Program are also expected to utilize the WQSRF program to cover non-ENR costs of the upgrade.

SUPPLEMENTAL ASSISTANCE PROGRAM

The Supplemental Assistance Program provides grant assistance to local

governments for planning, design, and construction of needed wastewater facilities. This program is used to help fund projects that MDE deems necessary to address high priority public health or water quality problems, and where the grantee's ability to pay for the needed improvements is usually limited. The majority of grant recipients are the more rural, less affluent counties and municipalities. This program helps pay for compliance-related wastewater treatment plant rehabilitation; the connection of older, established communities with failing septic systems to public sewers; and the correction of system deficiencies, such as combined sewer overflows, excessive inflow and infiltration, or antiquated pump stations. This program also supplements the local share of BNR upgrades for small, low-income jurisdictions. Grants are typically used in conjunction with other State and Federal funding sources with participation by the grantee at a level determined to be affordable. Although the program represents a small fraction of the State's overall wastewater needs, it is used annually to address the most critical water quality and public health needs in those Maryland jurisdictions least able to proceed alone with project implementation.

Implementation Barriers and Possible Solutions

Barriers to Implementation	Solutions to Overcome Barriers
<ul style="list-style-type: none"> Continued growth will lead to increased loads on wastewater treatment plants. The District of Columbia Tributary Strategy does not include upgrading the Blue Plains Wastewater Treatment Plant. 	<ul style="list-style-type: none"> Local governments and wastewater treatment plant owners could explore water reuse and zero discharge to maintain nutrient loading caps. Loading caps can also be maintained through trading or offsets. Federal, State, and local governments should continue discussions with the District of Columbia Water and Sewer Authority to secure Federal support and funding for the Blue Plains Wastewater Treatment Plant upgrade with nutrient reductions.

State Initiatives to Address the Implementation Gaps

2-YEAR ACTION PLAN

These initiatives are organized by the agency that will be responsible for implementing them. Many of these initiatives, however, will require the cooperation and coordination of several State agencies, local governments, and other stakeholders.

MDE will implement the following actions:

- Complete ENR upgrades at six (6) significant wastewater treatment plants. This is an ongoing action that is being implemented through the Bay Restoration Fund.

Implement the December 2004 EPA/States Chesapeake Bay Permitting Approach. As the discharge permits for the significant facilities come up for renewal, the annual loading caps for total nitrogen and phosphorus will be included as permit limits. Maryland will also include in these permits a requirement

consistent with the Point Source Strategy to upgrade the facility to achieve ENR and operate the ENR facility, once the upgrade is completed, in a manner that optimizes its nutrient removal capability. The load allocations for non-significant facilities will be implemented through a goal-based approach.

- Develop a trading/offset strategy to address growth and provide for cap maintenance.

The Maryland Department of Natural Resources (DNR) will implement the following actions:

- Upgrade the facility at Elk Neck State Park to ENR treatment.

5-YEAR ACTION PLAN

These initiatives are organized by the agency that will be responsible for implementing them. Many of these initiatives, however, will require the cooperation and coordination of several State agencies, local governments, and other stakeholders.



MDE will implement the following actions:

- Complete ENR upgrades at 48 significant wastewater treatment plants. This is an ongoing action that will be implemented through the Bay Restoration Fund. MDE is the responsible agency.
- Implement the December 2004 EPA/States Chesapeake Bay Permitting Approach.

LONG-TERM ACTION PLAN

These are long-term initiatives for education, policy, and restoration needs to meet Bay water quality standards. They are organized by the agency that will be responsible for implementing them. Many of these initiatives, however, will require the cooperation and coordination of several State agencies, local governments, and other stakeholders.

MDE will implement the following actions:

- Complete ENR upgrade at 12 significant wastewater treatment plants, including upgrade of the three largest facilities - Back River, Patapsco, and Blue Plains. Continue ongoing inter-jurisdictional coordination of the Blue Plains wastewater treatment plant upgrade.

Stakeholder Roles in Implementing the Strategy

PRIVATE LANDOWNERS

- Support the Bay Restoration Fund, which is a dedicated fund financed by citizens



and businesses to upgrade Maryland wastewater treatment plants with ENR facilities.

- Support local officials in project development and implementation.
- Establish and support water conservation as a critical part of reducing the amount of wastewater that needs to be treated.

STATE GOVERNMENT

- Process and administer the Bay Restoration Fund. MDE will issue bonds pledged in full or in part from funds generated by this program.
- Manage the planning, design, and construction of ENR at the major publicly owned wastewater treatment facilities discharging to the Chesapeake Bay.



- Provide financial assistance to local governments for smaller, private, and industrial wastewater treatment facilities on a case-by-case basis considering cost effectiveness, water quality benefits, readiness to proceed, and nitrogen/phosphorus contributions to the Bay.
- Incorporate load caps into NPDES permits. Work with local governments to develop a strategy to offset load increases and maintain load caps achieved as a result of ENR Strategy implementation.

FEDERAL GOVERNMENT

- Upgrade federal facilities to meet ENR concentrations of 3.0 mg/l or less total nitrogen and 0.3 mg/l or less total phosphorus and adhere to loading caps established for all wastewater treatment facilities.
- Provide additional funding to allow projects and the ENR Program to be more affordable.
- Administer the NPDES Permits Program, which is delegated to the State of

Maryland. The EPA is responsible for issuing the NPDES permit for the Blue Plains Wastewater Treatment Plant, which serves portions of Montgomery and Prince George's Counties.

LOCAL GOVERNMENTS

- Initiate the planning, design, and construction of ENR projects.
- Develop implementation schedules to meet the 2010 Tributary Strategy goals.
- Work with congressional delegations and request additional Federal funding to make projects more affordable.

BAY RESTORATION FUND

ADVISORY COMMITTEE

- Evaluate the cost, funding, and effectiveness of the wastewater treatment plant upgrades. Consult and advise the counties and MDE regarding the on-site system upgrade program. Recommend future changes to the restoration fee if necessary.